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(54) Title: EPAD, AN OOCYTE SPECIFIC PROTEIN

(57) Abstract: The present invention is directed to a human egg specific protein (ePAD), antibodies specific for the human egg specific protein and the use of the ePAD protein to identify antagonists of ePAD activity. Antagonists of ePAD activity are anticipated to have utility as female contraceptive agents.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00591

## Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material



a sequence listing



table(s) related to the sequence listing

b. format of material



in written format



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contained in the international application as filed



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In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00591

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 16/00; C07H 21/04; C12N 15/85, 15/86; G01N 33/53; A61K 39/00  
US CL : 530/388.26; 536/23.1, 325; 435/7.1; 424/185.1, 184.1

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 530/388.26; 536/23.1, 325; 435/7.1; 424/185.1, 184.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P —	WRIGHT, P.W. et al., ePAD, an oocyte and early embryo-abundant peptidylarginine deiminase-like protein that localizes to egg cytoplasmic sheets. Developmental Biology. April 2003, Vol. 256, pages 73-88, see entire document, particularly Abstract, Discussion and Figure 2.	1, 3-4
Y, P		2, 5-21
X, P —	US 2003/0186369 A1 (HERR et al.) 02 October 2003, see entire document.	1, 3-4
Y, P		2, 10-15
X —	WO 02/090531 A2 (AKZO NOBEL N.V.) 14 November 2002, see entire document.	5, 10, 12, 16, 19
Y		1, 3
Y	LIN, C.H. et al. Arginine methylation of recombinant murine fibrillarin by protein arginine methyltransferase. J. Protein Chem. 21 October 2002, Vol. 21, pages 447-453, see entire document.	5



Further documents are listed in the continuation of Box C.



See patent family annex.

### \* Special categories of cited documents:

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## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WANG, H. et al. Methylation of histone H4 at arginine 3 facilitating transcriptional activation by nuclear hormone receptor. Science. 03 August 2001, Vol. 293, pages 853-857, see entire document.	5
Y	SENSHU, T. et al. Studies on specificity of peptidylarginine deiminase reactions using an immunochemical probe that recognizes an enzymatically deiminated partial sequence of mouse keratin K1. Journal Dermatological Science. 1999, Vol. 21, pages 113-126, see entire document.	5
X	KOIKE, H. et al. Existence and differential changes of peptidylarginine deiminase type II in mouse yolk-sac erythroid cells. Biosci. Biotech. Biochem. 1995, Vol. 59, pages 552-554, see entire document.	1, 3,